

AMENDMENTS TO THE CLAIMS

The claims in this listing replaces all prior versions and listings of claims in the application.

Listing of Claims:

1. (currently amended) A power apparatus for electromagnetic induction heating ~~means including that includes~~ a heat generating member and an exciting coil provided in ~~the a~~ vicinity of the heat generating member and serving to cause the heat generating member to generate heat by electromagnetic induction, ~~the power apparatus~~ comprising:

a switching unit which supplies [[a]] power to the exciting coil;

a switching unit voltage detecting circuit which detects that a voltage to be applied to the switching unit exceeds a safe operating voltage ~~range~~ limit; and

a control circuit which controls a power to be supplied to the coil in response to a detection signal of the switching unit voltage detecting circuit.

2. (currently amended) The power apparatus according to claim 1, wherein when the switching unit voltage detecting circuit detects that the safe operating voltage ~~range~~ limit of the switching unit is exceeded, the control circuit limits the supply of the power to the exciting coil to carry out a control in such a manner that the voltage to be applied to the switching unit maintains [a] the safe operating voltage range limitation limit.

3. (currently amended) The power apparatus according to claim 1, wherein when the switching unit voltage detecting circuit detects that the safe operating voltage ~~range~~ limit of the switching unit is exceeded, the control circuit detects the supply of the power

to the exciting coil and makes the voltage to be applied to the switching unit attenuate on an optional level within [a] the safe operating voltage range limitation limit.

4. (currently amended) The power apparatus according to claim 1, wherein when the switching unit voltage detecting circuit detects that the safe operating voltage range limit of the switching unit is exceeded, the control circuit stops the supply of the power to the exciting coil.

5. (cancelled)

6. (currently amended) A power apparatus for electromagnetic induction heating that includes a heat generating member and an exciting coil provided in a vicinity of the heat generating member and serving to cause the heat generating member to generate heat by electromagnetic induction, comprising:

a switching unit which supplies power to the exciting coil;

a power apparatus input voltage detecting circuit which detects that a commercial alternating voltage to be input to the power apparatus exceeds a maximum rated input voltage of the power apparatus;

a control circuit which controls a power to be supplied to the coil corresponding to a detection signal of the power apparatus input voltage detecting circuit; and

~~The power apparatus according to claim 5, further comprising a power apparatus input voltage detecting circuit which detects a sharp rising fluctuation in the commercial alternating voltage to be input to the power apparatus.~~

7. (currently amended) The power apparatus according to claim 4, wherein the control circuit stops supply of [[a]] power to the exciting coil in response to the detection signal of the power apparatus input voltage detecting circuit.

8. (original) The power apparatus according to claim 7, wherein after the control circuit stops the supply of the power to the exciting coil, an amount of the power supplied to the exciting coil is gradually increased from zero with passage of time in response to a disappearance of the detection signal of the power apparatus input voltage detecting circuit.

9. (currently amended) An electromagnetic induction heating fixing apparatus for an image forming apparatus, comprising:

a heat generating member;

an exciting coil provided in the vicinity of the heat generating member; and

a power apparatus, comprising:

a switching unit which supplies [[a]] power to the exciting coil;

a switching unit voltage detecting circuit which detects that a voltage to be applied to the switching unit exceeds a safe operating voltage range limit; and

a control circuit which controls a power to be supplied to the coil in response to a detection signal of the switching unit voltage detecting circuit.

10. (currently amended) An electromagnetic induction heating fixing apparatus for an image forming apparatus, comprising:

a heat generating member;

an exciting coil provided in the vicinity of the heat generating member; and

a power apparatus, comprising:

a switching unit which supplies [[a]] power to the exciting coil;

a power apparatus input voltage detecting circuit which detects that a commercial alternating voltage to be input to the power apparatus exceeds a maximum rated input voltage of the power apparatus; and

a control circuit which controls a power to be supplied to the coil corresponding to a detection signal of the power apparatus input voltage detecting circuit, wherein said power apparatus input voltage detecting circuit detects a sharp rising fluctuation in the commercial alternating voltage to be input to the power apparatus.

11. (currently amended) An image forming apparatus, comprising:

a photosensitive member;

a charger which uniformly charges a surface of the photosensitive member to have a predetermined electric potential;

an exposing unit which irradiates a scanning line of a light beam corresponding to image data on the charged photosensitive member, thereby forming electrostatic latent images;

a developer which develops the electrostatic latent images formed on the photosensitive member;

a cleaner which removes a toner remaining on the photosensitive member; and

an electromagnetic induction heating fixing apparatus ~~including that includes~~ a heat generating member, an exciting coil provided in the vicinity of the heat generating member; and a power apparatus, the power apparatus comprising:

 a switching unit which supplies [[a]] power to the exciting coil;

 a switching unit voltage detecting circuit which detects that a voltage to be applied to the switching unit exceeds a safe operating voltage ~~range~~ limit; and

 a control circuit which controls a power to be supplied to the coil in response to a detection signal of the switching unit voltage detecting circuit.

12. (currently amended) An image forming apparatus, comprising:

a photosensitive member;

a charger which uniformly charges a surface of the photosensitive member to have a predetermined electric potential;

an exposing unit which irradiates a scanning line of a light beam corresponding to image data on the charged photosensitive member, thereby forming electrostatic latent images;

a developer which develops the electrostatic latent images formed on the photosensitive member;

a cleaner which removes a toner remaining on the photosensitive member; and

 an electromagnetic induction heating fixing apparatus ~~including that includes~~ a heat generating member, an exciting coil provided in the vicinity of the heat generating member; and a power apparatus, the power apparatus comprising:

 a switching unit which supplies [[a]] power to the exciting coil;

a power apparatus input voltage detecting circuit which detects that a commercial alternating voltage to be input to the power apparatus exceeds a maximum rated input voltage of the power apparatus; and

a control circuit which controls a power to be supplied to the coil corresponding to a detection signal of the power apparatus input voltage detecting circuit, wherein said power apparatus input voltage detecting circuit detects a sharp rising fluctuation in the commercial alternating voltage to be input to the power apparatus.

13. (new) The power apparatus according to claim 1, wherein when the switching unit voltage detecting circuit detects that an applied voltage to the switching unit exceeds the safe operating voltage limit defined as a limit to which the switching unit is normally operable, the control circuit limits the supply of the power to the exciting coil to carry out a control in such a manner that the voltage to be applied to the switching unit maintains the safe operating voltage limit.

14. (new) The power apparatus according to claim 1, wherein when the switching unit voltage detecting circuit detects that an applied voltage to the switching unit exceeds the safe operating voltage limit defined as a limit to which the switching unit is normally operable, the control circuit detects the supply of the power to the exciting coil and makes the voltage to be applied to the switching unit attenuate on an optional level within the safe operating voltage limit.

15. (new) The power apparatus according to claim 1, wherein when the switching unit voltage detecting circuit detects that an applied voltage to the switching unit exceeds the safe operating voltage limit defined as a limit to which the switching unit is normally operable, the control circuit stops the supply of the power to the exciting coil.

16. (new) A power apparatus, comprising:
a full-rectification circuit that rectifies an alternating voltage applied from an input terminal;
a capacitance element that detects at least one of an excessive surge voltage and a rapid voltage fluctuation from a D.C. voltage smoothed by said full-rectification circuit.

17. (new) The power apparatus according to claim 16, further comprising:
a switching unit which supplies power to an exciting coil;
a comparator which outputs a stop signal when the capacitance element detects at least one of excessive surge voltage and rapid voltage fluctuation from the D.C. voltage;
and
a switching element oscillation control circuit which stops a voltage supply operation of the switching element according to the stop signal output from the comparator.

18. (new) A fixing apparatus, comprising the power apparatus of claim 16.

19. (new) A fixing apparatus, comprising the power apparatus of claim 17.

20. (new) An image forming apparatus, comprising the fixing apparatus of claim 18.

21. (new) An image forming apparatus, comprising the fixing apparatus of claim 19.